

What is claimed is:

1. An electrical device package comprising:
  - a die;
  - a plurality of lead fingers, some of the lead fingers being electrically connected to the die;
  - a conductive sheet having an inner region, an outer region and at least one opening in the sheet, the inner region being electrically connected to the die, and the outer region being electrically connected to at least one of the lead fingers and electrically insulated from other lead fingers; and
  - an encapsulant containing the die and the conductive sheet, a portion of the encapsulant on one side of the conductive sheet being physically connected to another portion of the encapsulant on the other side of the conductive sheet through the at least one opening in the conductive sheet.
2. The electrical device package of claim 1, wherein the plurality of lead fingers are substantially parallel to one another and the distance between two immediately adjacent lead fingers is about 80-100 microns.
3. The electrical device package of claim 1, wherein the inner region of the conductive sheet is electrically connected to a die attach pad and the die attach pad is electrically connected to a first surface of the die.
4. The electrical device package of claim 3, wherein the first surface of the die has a plurality of bond pads and the die attach pad is electrically connected to one of the bond pads through a bondwire.
5. The electrical device package of claim 1, wherein the at least one of the plurality of lead fingers is electrically connected to a ground.
6. The electrical device package of claim 1, wherein the at least one of the plurality of lead fingers is electrically connected to a power supply.
7. The electrical device package of claim 1, wherein the area of the at least one opening is greater than or equal to 50% of the solid area of the conductive sheet.

8. The electrical device package of claim 1, wherein the at least one opening comprises a plurality of through holes in the conductive sheet.

9. The electrical device package of claim 1, wherein the plurality of through holes are regularly spaced on the conductive sheet and the dimension of each hole is large enough for the encapsulant to move through the hole.

10. The electrical device package of claim 9, wherein the diameter of the through holes is at least 4 mils.

11. The electrical device package of claim 1, wherein the conductive sheet is made of copper.

12. The electrical device package of claim 1, wherein the conductive sheet is a mesh made of copper.

13. An electrical device package comprising:

a die attach pad;

a die having a first surface and a second surface and a plurality of bond pads on the first surface, the second surface being adhered to the die attach pad and at least one of the plurality of bond pads being electrically connected to the die attach pad;

a plurality of lead fingers, a subset of the plurality of lead fingers being electrically connected to a subset of the bond pads on the first surface of the die through bondwires;

a conductive sheet having an inner region, an outer region and an array of through holes, the inner region being electrically connected to the die attach pad, and the outer region being electrically connected to at least one of the plurality of lead fingers and electrically insulated from other lead fingers; and

an encapsulant that encapsulates the die, the die attach pad and the conductive sheet, a first part of the encapsulant being physically connected to a second part of the encapsulant through the plurality of through holes in the conductive sheet.

14. A method of reducing crosstalk in a lead frame based electrical device package, comprising:

providing a die attach pad;

attaching a die to the die attach pad, the die having a plurality of bond pads on its surface;

deploying a plurality of lead fingers near the die and electrically connecting a subset of the lead fingers to a subset of the bond pads;

positioning a conductive sheet below the die attach pad and the plurality of lead fingers, the conductive sheet having an inner region, an outer region and at least one opening;

electrically connecting the inner region of the conductive sheet to the die and the outer region to at least one of the plurality of lead fingers; and

encapsulating the die, the die attach pad and the conductive sheet with an encapsulant, the encapsulant having a first portion and a second portion that are physically connected together through the at least one opening of the conductive sheet, and the encapsulant electrically insulating the conductive sheet from the lead fingers that are not electrically connected to the conductive sheet.

15. The method of claim 14, wherein the inner region of the conductive sheet is electrically connected to the die attach pad and the die attach pad is electrically connected to the die.

16. The method of claim 15, wherein the die has a plurality of bond pads and the die attach pad is electrically connected to one of the bond pads through a bondwire.

17. The method of claim 14, wherein the lead finger(s) connected to the conductive sheet is electrically connected to a ground.

18. The method of claim 14, wherein the lead finger(s) connected to the conductive sheet is electrically connected to a power supply.

19. The method of claim 14,, wherein the area of opening(s) is greater than or equal to 50% of the solid area of the conductive sheet.

20. The method of claim 14, wherein the at least one opening comprises a plurality of through holes that are regularly spaced on the conductive sheet and the dimension of each hole is large enough for the encapsulant to move smoothly through the hole.

21. An electrical device package comprising:  
a plurality of lead fingers;

a die having a first surface and a second surface and a plurality of bond pads on the first surface, said die being connected to the lead fingers by first bondwires between at least some of the bond pads and some of the lead fingers;

a conductive sheet extending between the die and the plurality of lead fingers, the conductive sheet being electrically insulated from said first bondwires and the lead fingers to which they are connected;

an electrical connection between at least one bond pad and an inner region of the conductive sheet; and

an electrical connection between at least one lead finger and an outer region of the conductive sheet.

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